

display panel; a mold frame for receiving said liquid crystal display panel and said back light assembly; a chassis coupled to said mold frame, for fixing said liquid crystal display panel and said back light assembly to said mold frame; and a support means for supporting said flexible circuit board towards said mold frame.”

Thus, according to claim 1, the mold frame receives the liquid crystal display panel and the back light assembly. An example of this claimed feature is shown in Fig. 1 of the claimed invention, in which the mold frame 730 receives the LCD display 712 and the back light assembly 720.

In this regard, the Examiner asserted, in Hashimoto, “a glass plate to which everything is attached, 1a (serves as [Applicants’] mold frame) for receiving the liquid crystal display panel and the back light assembly” (Office Action, page 3, lines 4-6). This assertion is respectfully disagreed with.

In Fig. 4 of Hashimoto, the glass plate 1a a part of a liquid crystal panel 1, not a separate unit which can receive the liquid crystal panel 1. It would not be possible for the glass plate 1a to receive the liquid crystal panel to which the glass plate 1a belongs. Thus, the glass plate 1a would not be able to serve as the claimed mold frame, which receives the liquid crystal display panel and the back light assembly.

Also, the Examiner asserts that Hashimoto teaches a chassis in Fig. 10, but does not specify which element in Fig. 10 corresponds to the claimed chassis. Upon lack of clear indication, it is assumed that the Examiner considers a framework 2 as corresponding to the claimed chassis. This assertion is respectfully disagreed with.

Fig. 10 of Hashimoto shows a prior art structure that involves a wasted space problem caused by a framework 1. To solve the problem, in Hashimoto, the liquid crystal panel 1 and the

light conductive plate 9 are fixed by a frame member 8 as shown in Figs. 1 and 5. This reduces the size of an LCD unit, particularly the space wasted by a framework 2 in Fig. 1 of Hashimoto.

Thus, Hashimoto denounces the asserted combination of the structure shown in Fig. 4 and the framework in Fig. 1. For this reason, it would not be appropriate to assert that the liquid crystal display unit shown in Fig. 4 could comprise the frame member 8 shown in Fig. 4 and the framework 2 shown in Fig. 10. Thus, it is submitted that Hashimoto fails to teach the claimed chassis.

As explained above, Hashimoto fails to teach or suggest the claimed feature of "*a mold frame for receiving said liquid crystal display panel and said back light assembly; a chassis coupled to said mold frame, for fixing said liquid crystal display panel and said back light assembly to said mold frame*".

Thus, it is submitted that claim 1 is patentable over Hashimoto, and respectfully requested that the rejection over claim 1 be withdrawn.

Rejections Under 35 U.S.C. §103

In the Office Action, claims 2-5, 8, 9, 12-14 and 23 have been rejected under 35 U.S.C. §103(a) for being unpatentable over Hashimoto. This rejection is respectfully traversed.

Claims 2-5, 8, 9, 12-14 and 23 are dependent from independent claim 1. As mentioned above, claim 1 is believed to be patentable over Hashimoto. No secondary reference has been introduced to cure the deficiency from the teachings of Hashimoto. Thus, claims 2-5, 8, 9, 12-14 and 23 would be patentable at least for the same reason.

Accordingly, Applicants respectfully request that the rejection over claims 2-5, 8, 9, 12-14 and 23 be withdrawn.

Other Matters

In the Office Action, claims 6, 7, 10, 11 and 15-22 have been objected to for being dependent upon a rejected base claim. Since claims 6, 7, 10, 11 and 15-22 are dependent from claim 1 which is believed to be patentable over Hashimoto, it is respectfully requested that the objection over 6, 7, 10, 11 and 15-22 be withdrawn

In this response, independent claims 24-27 are newly added. Claims 24-27 recite "a mold frame for receiving the liquid crystal display panel and the back light assembly". As previously mentioned, Hashimoto fails to teach or suggest the claimed mold frame. Thus, newly added claims 24-27 would be patentable at least for the same reason.

Particularly, claim 27 recites "a flexible circuit board attached to said liquid crystal display panel ..., a portion of the flexible circuit board being bent in a predetermined angle towards an outside of a wall of said mold frame". The claimed flexible circuit board does not have a printed circuit board formed thereon to reduce the thickness of the liquid crystal display device. In this regard, in Hashimoto, the flexible printed circuit a circuit board 3 formed thereon. Thus, due to the circuit board 3, the liquid crystal display device shown in Hashimoto has a structure that is thicker than that of the claimed liquid crystal display device.

Also, claim 27 further recites "a support means disposed between the chassis and the flexible circuit board to be coupled with the first portions of the outside of the side wall of the mold frame, for supporting the flexible circuit board to second portions of the outside of the side wall of said mold frame". Since the flexible circuit board is supported by the support means towards the second portions of the outside of the sidewall of the mold frame, the flexible circuit board is prevented from moving around. In this regard, in Hashimoto, the circuit board 3 is not

prevented from freely moving around because no support is provided to prevent the circuit board 3 from moving up and down. Thus, Applicants respectfully submit that claim 27 is patentable over Hashimoto.

CONCLUSION

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicants believe that a full and complete response has been made to the outstanding Office Action and, as such, claims 1-27 are in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment is respectfully requested.

Respectfully submitted,



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APPENDIX A

The clean version of the entire set of pending claims is as follows. The "marked-up" version of the amended claims is provided in the APPENDIX B hereafter.

1. (Amended) A liquid crystal display device, comprising:

a liquid crystal display panel;

a flexible circuit board attached to said liquid crystal display panel, for applying driving signals to said liquid crystal display panel;

a back light assembly for providing a light to said liquid crystal display panel;

a mold frame for receiving said liquid crystal display panel and said back light assembly;

a chassis coupled to said mold frame, for fixing said liquid crystal display panel and said back light assembly to said mold frame; and

a support means for supporting said flexible circuit board towards said mold frame.

2. (Amended) The liquid crystal display device according to claim 1, wherein a receiving recess for receiving the flexible circuit board is formed in the mold frame.

3. (Amended) The liquid crystal display device according to claim 2, wherein a recessed portion of the receiving recess at the upper end of the outer side surface of a side wall of the mold frame is deeper than a recessed portion of the receiving recess at the lower end thereof.

4. (Amended) The liquid crystal display device according to claim 2, wherein a portion of the receiving recess is deeper to receive a protruding portion which is attached to the flexible circuit board.

5. (Amended) The liquid crystal display device according to claim 1, wherein the support means is a separating support member closely supporting a bottom surface of the flexible circuit board which is inserted into the receiving recess and is bent towards attached the outside of a side wall of the mold frame, for locating the flexible circuit board in the receiving recess, the separating support member being separated from the chassis.

6. (Amended) The liquid crystal display device according to claim 5, wherein an engaging recess having a predetermined depth are formed at both ends of the receiving recess; and an engaging hole having a predetermined depth formed in a surface of the engaging recess.

7. (Amended) The liquid crystal display device according to claim 6, wherein the separating support member comprises a fixing body having an inclined surface, an engaging plate formed on both sides of the fixing body and inserted into the engaging recess, and an engaging boss formed on the engaging plate and inserted into the engaging recess.

8. (Amended) The liquid crystal display device according to claim 1, wherein the support means is a fixing film, of which one end is attached to the inner surface of the chassis and the other end is fixed to the bottom surface of the mold frame for pressing said flexible circuit board towards the inner side of the receiving recess.

9. (Amended) The liquid crystal display device according to claim 8, further comprising a bonding material or a bonding tape for fixing the bottom surface of the mold frame and the end portion of the fixing film which is opposite to the bottom surface of the mold frame.

10. (Amended) The liquid crystal display device according to claim 8, wherein a boss is formed on a bottom surface of the mold frame, and a penetrating hole for fixing the fixing film by inserting the boss into the penetrating hole is formed in a portion of the fixing film which corresponds to the boss.

11. (Amended) The liquid crystal display device according to claim 8, wherein a plurality of flexible circuit boards are attached to one side of the liquid crystal display device, and one side end which is attached to the chassis among a plurality of fixing films which correspond to the number of the flexible circuit boards is protruded as the number of the receiving recess, and the other side end which is attached to the mold frame among the fixing films is integrally connected.

12. (Amended) The liquid crystal display device according to claim 1, wherein a resilient member which fixes the flexible circuit board is installed between a rear side surface of the flexible circuit board which is received in the receiving recess and an inner side surface of the chassis.

13. (Amended) The liquid crystal display device according to claim 1, wherein the support means is an integral support member which is fixed to the chassis which is provided at a side wall portion of the chassis which corresponds to the flexible circuit board.

14. (Amended) The liquid crystal display device according to claim 13, wherein the integral support member is comprised of a resilient material.

15. (Amended) The liquid crystal display device according to claim 13, wherein the integral support member has an L-shape, and a horizontal portion thereof is attached to an inner side wall of the chassis to resiliently support a rear surface of the flexible circuit board.

16. (Amended) The liquid crystal display device according to claim 13, further comprising a protecting cover, of which one end is fixed to the side wall portion of the chassis at a position higher than the integral support portion between the flexible circuit board and the integral support portion, and which is extended to one end of a bottom surface portion of the mold frame, covering the flexible circuit board.

17. (Amended) The liquid crystal display device according to claim 16, further comprising a protecting cover fixing means for fixing the other end of the protecting cover to the bottom surface portion of the mold frame.

18. (Amended) The liquid crystal display device according to claim 13, further comprising a printed circuit board cover for protecting a bottom surface portion to which an

integrated circuit board is attached and a bottom surface portion to which the flexible circuit board is attached, the printed circuit board cover being provided on a bottom surface of the mold frame.

19. (Amended) The liquid crystal display device according to claim 13, wherein the integral support member is a bending piece which is integrally fixed to the side wall portion of the chassis which corresponds to a portion to which the flexible circuit board is attached and is bent to support the flexible circuit board from the side wall portion of the chassis.

20. (Amended) The liquid crystal display device according to claim 19, wherein the bending piece comprises a horizontal portion which is fixed to a central portion of the side wall portion of the chassis and an inclined portion which is provided at an end of the horizontal portion to resiliently make contact with the flexible circuit board and support the flexible circuit board.

21. (Amended) The liquid crystal display device according to claim 20, further comprising a support portion for resiliently support the inclined portion, which is formed at an end of the inclined portion and is extended to the bottom surface portion of the mold frame.

22. (Amended) The liquid crystal display device according to claim 21, wherein the support portion has a hook shape.

23. (Amended) The liquid crystal display device according to claim 1, wherein the liquid crystal display device comprises an integrated printed circuit board having a source portion for providing a data driving signal to the liquid crystal display panel through a data line of the liquid crystal display panel and a gate portion for providing a gate driving signal to a gate line of the liquid crystal panel, and the flexible circuit board is a gate side flexible circuit board which is attached to the gate side of the liquid crystal display panel to transfer the gate driving signal from the integrated printed circuit board to the liquid crystal display panel.

24. (Newly Added) A liquid crystal display device, composing:
a liquid crystal display panel;
a back light assembly for providing a light to the liquid crystal display panel;
a mold frame for receiving the liquid crystal display panel and the back light assembly;
an integrated printed circuit board attached to a first portion of the liquid crystal panel, the integrated printed circuit board having a first part for providing image signals and a second part for providing first driving signals to the liquid crystal display panel;
a first flexible circuit board for connecting the integrated printed circuit board to a first portion of the liquid crystal display panel;
a second flexible circuit board attached to a second portion of the liquid crystal display panel, for applying second driving signals to the liquid crystal display panel, a portion of the flexible circuit board being bent in a predetermined angle towards an outside of a side well of the mold frame;
a chassis coupled to the mold frame, for fixing the liquid crystal display panel and the back light assembly to the mold frame; and

a support means disposed between the chassis and the flexible circuit board, for supporting the flexible circuit board towards the outside of the side wall of the mold frame.

25. (Newly Added) A liquid crystal display device, composing:

a liquid crystal display panel;

a back light assembly for providing a light to the liquid crystal display panel,

a mold frame for receiving the liquid crystal display panel and the back light assembly;

a flexible circuit board attached to a portion of the liquid crystal display panel, for applying driving signals to the liquid crystal display panel, a portion of the flexible circuit board being bent perpendicular to the liquid crystal display panel to be opposite to an outside of a side wall of the mold frame; and

a chassis coupled to the mold frame, for axing the liquid crystal display panel and the back light assembly to the mold frame.

26. (Newly Added) A liquid crystal display device, comprising:

a liquid crystal display panel;

a back light assembly for providing a light to the liquid crystal display panel;

a mold frame for receiving the liquid crystal display panel and the back light assembly;

an integrated printed circuit board attached to a first portion of the liquid crystal panel, the integrated printed circuit board having a first part for providing image signals and a second part for providing first driving signals to the liquid crystal display panel;

a first flexible circuit board for connecting the integrated printed circuit board to a first portion of the liquid crystal display panel;

26. a second flexible circuit board attached to a second portion of the liquid crystal display panel, for applying second driving signals to the liquid crystal display panel, a portion of the flexible circuit board being bent perpendicular to the liquid crystal display panel to be opposite to an outside of a side wall of the mold frame; and

a chassis coupled to the mold frame, for fixing the liquid crystal display panel and the back light assembly to the mold frame.

27. (Newly Added) A liquid crystal display device, comprising:

a liquid crystal display panel;

a back light assembly for providing a light to said liquid crystal display panel;

a mold frame for receiving said liquid crystal display panel and said back light assembly;

a flexible circuit board attached to said liquid crystal display panel, for applying driving signals to said liquid crystal display panel, a portion of the flexible circuit board being bent in a predetermined angle towards an outside of a side wall of said mold frame;

a chassis coupled to said mold frame, for fixing said liquid crystal display panel and said back light assembly to said mold frame; and

a support means disposed between the chassis and the flexible circuit board to be coupled with the first portions of the outside of the side wall of the mold frame, for supporting the flexible circuit board to second portions of the outside of the side wall of said mold frame.

APPENDIX B

The "marked-up" version of the amended claim is as follows.

1. (Amended) A liquid crystal display device, comprising:
[a display unit having] a liquid crystal display panel[, and];
a flexible circuit board [which is] attached to [the] said liquid crystal display panel, for
applying driving signals to said liquid crystal display panel [for driving the liquid crystal panel];
a back light assembly [which provides] for providing a light to said liquid crystal display
panel;
a mold frame for receiving [the] said liquid crystal display panel and [the] said back light
assembly;
a chassis[, being] coupled to said mold frame, for fixing said liquid crystal display panel
and said back light assembly to said mold frame; and
a support means for supporting [the] said flexible circuit board towards [the] said mold
frame.
2. (Amended) [A] The liquid crystal display device according to claim 1, wherein a
receiving recess for receiving the [gate side] flexible circuit board is formed in the mold frame.
3. (Amended) [A] The liquid crystal display device according to claim 2, wherein a
recessed portion of the receiving recess at the upper end of the outer side surface of a side wall of
the mold frame is deeper than a recessed portion of the receiving recess at the lower end thereof.

4. (Amended) [A] The liquid crystal display device according to claim 2, wherein a portion of the receiving recess is deeper to receive a protruding portion which is attached to the flexible circuit board.

5. (Amended) [A] The liquid crystal display device according to claim 1, wherein the support means is a separating support member closely supporting a bottom surface of the flexible circuit board which is inserted into the receiving recess and is bent towards attached the outside of a side wall of the mold frame, for locating the flexible circuit board in the receiving recess, the separating support member being separated from the chassis.

6. (Amended) [A] The liquid crystal display device according to claim 5, wherein an engaging recess having a predetermined depth are formed at both ends of the receiving recess; and an engaging hole having a predetermined depth formed in a surface of the engaging recess.

7. (Amended) [A] The liquid crystal display device according to claim 6, wherein the separating support member comprises a fixing body [which has] having an inclined surface, an engaging plate [which is] formed on both sides of the fixing body and [is] inserted into the engaging recess, and an engaging boss [which is] formed [in] on the engaging plate and [is] inserted into the engaging recess.

8. (Amended) [A] The liquid crystal display device according to claim 1, wherein the support means is a fixing film, of [in] which one end [thereof] is attached to the inner surface

of the chassis and the other end [thereof] is fixed to the bottom surface of the mold frame[,] for pressing [the] said flexible circuit board towards the inner side of the receiving recess.

9. (Amended) [A] The liquid crystal display device according to claim 8, further comprising a bonding material or a bonding tape for fixing the bottom surface of the mold frame and the end portion of the fixing film which is opposite to the bottom surface of the mold frame.

10. (Amended) [A] The liquid crystal display device according to claim 8, wherein a boss is formed on [the] a bottom surface of the mold frame, and a penetrating hole for fixing the fixing film by inserting the boss into the penetrating hole is formed in a portion of the fixing film which corresponds to the boss.

11. (Amended) [A] The liquid crystal display device according to claim 8, wherein a plurality of flexible circuit boards are attached to one side of the liquid crystal display device, and one side end which is attached to the chassis among a plurality of fixing films which correspond to the number of the flexible circuit boards is protruded as the number of the receiving recess, and the other side end which is attached to the mold frame among the fixing films is integrally connected.

12. (Amended) [A] The liquid crystal display device according to claim 1, wherein a resilient member which fixes the flexible circuit board is installed between [the] a rear side surface of the flexible circuit board which is received in the receiving recess and [the] an inner side surface of the chassis.

13. (Amended) [A] The liquid crystal display device according to claim 1, wherein the support means is an integral support member which is fixed to the chassis which is provided at a side wall portion of the chassis which corresponds to the flexible circuit board.

14. (Amended) [A] The liquid crystal display device according to claim 13, wherein the integral support member is comprised of a resilient material.

15. (Amended) [A] The liquid crystal display device according to claim 13, wherein the integral support member has an L-shape, and [the] a horizontal portion thereof is attached to an inner side wall of the chassis to resiliently support [the] a rear surface of the flexible circuit board.

16. (Amended) [A] The liquid crystal display device according to claim 13, further comprising a protecting cover, of [in] which one end [thereof] is fixed to [a] the side wall portion of the chassis at a position higher than the integral support portion between the flexible circuit board and the integral support portion, and which is extended to one end of [the] a bottom surface portion of the mold frame, covering the flexible circuit board.

17. (Amended) [A] The liquid crystal display device according to claim 16, further comprising a protecting cover fixing means for fixing the other end of the protecting cover to the bottom surface portion of the mold frame.

18. (Amended) [A] The liquid crystal display device according to claim 13, further comprising a printed circuit board cover for protecting a bottom surface portion to which an integrated circuit board is attached and a bottom surface portion to which the flexible circuit board is attached, the printed circuit board cover being provided on [the] a bottom surface of the mold frame.

19. (Amended) [A] The liquid crystal display device according to claim 13, wherein the integral support member is a bending piece which is integrally fixed to the side wall portion of the chassis which corresponds to a portion to which the flexible circuit board is attached and is bent to support the flexible circuit board from the side wall portion of the chassis.

20. (Amended) [A] The liquid crystal display device according to claim 19, wherein the bending piece comprises a horizontal portion which is fixed to a central portion of the side wall portion of the chassis and an inclined portion which is provided at [the] an end of the horizontal portion to resiliently make contact with the flexible circuit board and support the flexible circuit board.

21. (Amended) [A] The liquid crystal display device according to claim 20, further comprising a support portion for resiliently support the inclined portion, which is formed at [the] an end of the inclined portion and is extended to the bottom surface portion of the mold frame.

22. (Amended) [A] The liquid crystal display device according to claim 21, wherein the support portion has a hook shape.

23. (Amended) [A] The liquid crystal display device according to claim 1, wherein the liquid crystal display device comprises an integrated printed circuit board having a source portion for providing a data driving signal to the liquid crystal display panel through a data line of the liquid crystal display panel and a gate portion for providing a gate driving signal to a gate line of the liquid crystal panel, and the flexible circuit board is a gate side flexible circuit board which is attached to the gate side of the liquid crystal display panel to transfer the gate driving signal from the integrated printed circuit board to the liquid crystal display panel.